A brief overview of Victorian marine molluscs 1900 to 2010

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Abstract
The number of species of molluscs known from Victorian waters has grown considerably in the 110 years since GB Pritchard's chapter on molluscs was printed in the Handbook of Melbourne. This paper briefly describes our understanding of Victoria's molluscan fauna in 1900 up to the present. (*The Victorian Naturalist* **128**(5) 2011, 198–200)

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The diversity of our molluscan fauna is amazing. Reading the chapter on Molluscs by GB Pritchard (1900: 135) in the *Handbook of Melbourne* reminds one of just how far our understanding of the fauna of our marine waters has progressed since then.

Pritchard begins with the statement:

> At first sight one is inclined to the opinion that the marine mollusca are not very well represented in Victoria, for one may go to the beach at several parts of Port Phillip, Western Port, and elsewhere along our coast without obtaining or even seeing much for their trouble ... looking up lists, catalogues, and other works we find the amount of knowledge of the Victorian forms extremely meagre.

He notes that the Mollusca had been dealt with by Dendy in the 1890 edition of the *Handbook*. At that time, based on the published lists of JH Gatliff (1887, 1888), there were '264 species of Gasteropoda and 86 of Lamellibranchiata' (Pritchard 1900: 135). He continued

> Since that time, however, our information has much increased, and I think I am well within the mark in stating that at present we know upwards of 500 species.

Pritchard refers to dredgings by Bracebridge Wilson at Port Phillip Heads (Wilson 1887) and Gabriel in Westernport Bay as important steps in increasing the knowledge of the Molluscan fauna in Victorian waters. Beginning in the late 1890s Pritchard and Gatliff published a *Catalogue of the Marine Shells of Victoria*, which by 1900 had reached Part III and included 219 species (Pritchard and Gatliff 1897–1904). He writes 'the paucity of species alluded to is in reality more apparent than real' (Pritchard 1900: 136).

In the 110 years since Pritchard's chapter in the *Handbook*, the number of species of molluscs recognised from Victorian waters has increased dramatically. For example, 22 species of chitons (class Polyplacophora) were known to him; the Australian list now numbers approximately 170 species with more than 85% known from the eastern and southern coasts.

Similar increases have been recorded for gastropods and bivalves. As noted above, the numbers for these species stood at approximately 500 in Pritchard's time; there are now probably close to 1300 species known from Victorian waters, including Bass Strait.

The most dramatic increase in our knowledge belongs to the Opisthobranchia or sea slugs. Pritchard (1900: 141) wrote:

> [of] one interesting group, namely, the Nudibranchs ... our knowledge of the Victorian forms is practically nil, though we appear to have a fairly large and interesting series.

The *Checklist and Bibliography the Opisthobranchia of Victoria and the Bass Strait area* (Burn 2006) lists 364 species.

Techniques for collecting shells and observing living molluscs have changed since those early days when the only way to obtain specimens from water more than a few metres deep was to dredge them. The advent of scuba diving and snorkelling as popular pastimes has opened up a whole new world for those with an interest in shells and the animals that make them.

Attitudes to shell collecting have changed also, with the prohibition on collecting live animals from the intertidal zone of the bays and much of the Victorian coastline.

Pritchard mentions many bayside beaches where molluscs were collected. He singles out Black Rock beyond Sandringham, Hampton, Corio Bay and Williamstown and thence to Altona all being profitable areas for collecting, although the latter 'being rather dirty, swampy and unpleasant' (Pritchard 1900: 136) – even back then! It is likely that the combined effects of pollution, changes to the hydrodynamics of the bays, harvesting for food and bait, trampling and habitat destruction have made these upper Port Phillip Bay locations much less desirable locations for mollusca nowadays.

Pritchard (1900: 137) mentions the areas between Balnarring to West Head and Flinders in Westernport Bay as 'being a most favourable and profitable of resorts'. It should be noted that all these areas are now protected shellfish habitat zones with the taking of live shells in the intertidal zone prohibited.

Pritchard's (1900: 137) listing of some species as being 'obtainable with great ease' is a little puzzling to this author, who has dived, beach walked and rock pool rambled for the last 25 years especially at the southern end of Port Phillip Bay. From this experience, the very beautiful and distinctive looking bivalve, *Neotrigonia margaritacea*, for example, is not found in Port Phillip now. Similarly, the equally beautiful cowry shell *Cypraea angustata* is no longer found on the Port Phillip Bay side of the Mornington Peninsula. Pritchard states that the eastern side of the bay from Rye to Sorrento may be regarded as an enjoyable and favourable hunting ground with many fine species including these species obtainable with great ease. Other species he lists, such as *Terebra albida*, *Cassis pyrum* and *Voluta* (now *Amoria*) *undulata* are now very difficult to find.

The bulk of the chapter on the mollusca in the *Handbook of Melbourne* describes localities along the coast where shells may be obtained, and various habitat types and species likely to be found therein. The species assemblages for the various habitats have not changed, although in many instances their names have. For example, a trip to a 'rocky and cliffy' part of the coast should still yield species such as *Turbo undulatus*, *Monodonta zebra* (now *Austrocochlea constricta*), *Risella melanostoma* (now *Bembicium melanostonum*), *Cominella lineolata*, *Diloma odontis* (now *Chlorodiloma odontis*) and *Purpura textilosa* (now *Dicathais orbita*).

In singling out *Turbo undulata* thus:

> of these the poor *Turbo undulatus* seems to have the most enemies, for, in addition to it being much sought after as a food for man, it may frequently be noted as supplying a meal to a great many of its carnivorous Molluscan associates

Pritchard (1900: 138) hints that harvesting for human consumption was perhaps an issue. Today a significant threat to many species, particularly in the intertidal zone on rocky reefs, is the illegal harvesting for food.

Since 1900, many species of molluscs have become economically important. From the 1950s to mid 1990s Scallops *Pecten fumatus* were dredged in Port Phillip Bay, and dredging continues to this day in Bass Strait. Two species of abalone, *Haliotis rubra* and *Haliotis laevigata*, are fished commercially in the waters of Bass Strait. Mussels are farmed in Port Phillip and Westernport Bays and a fishery exists for squid in Bass Strait.

Interestingly, Pritchard does not touch on conservation of molluscs. Today we are more aware of the threats that face molluscs, such as habitat destruction and invasive species. (Although we recognise the threats, we do not necessarily take notice of these threats—think of the threats posed by Desalination Plant, channel dredging, and ships' ballast.) This writer considers that invasive species pose the greatest threat to the diversity of our marine fauna.

As an example, three introduced species of bivalve molluscs, *Musculista senhousia*, *Corbula gibba* and *Theora fragilis* have proved particularly insidious. These small bivalves are not easily found, but during a recent survey *Corbula gibba* and *Theora fragilis* were found to be among the most common marine invertebrates on the sea floor of Port Phillip Bay (Hewitt *et al.* 1999). The New Zealand Screw Shell, *Maoricolpus roseus*, which has been established in Tasmania for many years and has colonised Twofold Bay in New South Wales, is now being recorded further west, in Victoria, with recent records from Waratah Bay, San Remo and even dead shells from Portsea.

As well as these invasive molluscan species, in Victoria there are also the North Pacific Sea star, European Fan Worm, European Shore Crab,

Japanese kelp and others. These species may prey on molluscs directly, compete with them for food or deny them shelter/habitat. Other threats include exotic diseases escaping from aquaculture; for example the abalone virus.

In the 110 years since Pritchard's paper, our knowledge of the habitats and life cycles of the marine molluscs of Victoria has vastly increased. Groups such as the Marine Research Group of FNCV (MRG) and the Malacological Society of Australasia have served as a meeting point for people who are interested in molluscs and marine life in general, and have contributed much to our knowledge of the Victorian fauna. The MRG organises field trips when tides are suitable, to record the species present at various localities across the state. Our knowledge has also been greatly increased by workers such as Florence Murray, Dr Brian Smith, Robert Burn, Dr Mark Norman, and many others.

Let us hope that we continue to strive to learn about our rich marine fauna into the future and ensure that our wonderful diversity is preserved.

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